

ABSTRACT

A robot system, operable to perform a task, is integrated on a robot with a sensor, a control module, and a virtual world. The virtual world represents a generic continuum including a collection of information replicating the spatial and temporal properties of a number of articles and related circumstances in an environment of the robot system. As the virtual world provides a common space-time reference for all of the articles, including the robot system itself, the robot system may perform its task in an efficient and robust manner. For example, the robot may move about its environment without colliding with the other articles. Further, the virtual world may include predicted information about the articles, including an anticipated position or condition of the article at a particular time. In this way, the robot system may perform its task in a timely manner, since its operations can be synchronized with the other articles and an idle time may be reduced.

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